Author Index of Volume 228

Abermann, R., 40
Albella, J. M., 247
Andreu, J., 165
Andújar, J. L., 109, 137
Asensi, J. M., 165

Bähr, M., 51
Balk, P., 27
Barkluund, A. M., 87
Barounig, J., 56
Basovich, A. J., 193
Beck, E., 23
Beißwenger, S., 51
Bell, T. J., 289
Berg, S., 87
Berthold, L., 173
Bertomeu, J., 165
Bertran, E., 109, 137
Bogdanov, Z., 261
Bredell, L. J., 267
Brener, R., 242
Brière, M., 141
Brongersma, S. H., 201
Brückner, W., 44
Butzke, S., 27

Campmany, J., 109, 137
Canillas, A., 109, 137
Car, T., 225
Carlsson, P., 87
Cavaleiro, A., 80
Ceballos, G., 36
Chang, C. Y., 205
Chaplanov, V., 297
Chulkov, E. V., 49
Colligon, J. S., 252
Costa, ., 137
Cser, L., 141

Dafne, Y., 242
Danev, G., 301
De Giorgi, M. L., 145
De Wilde, L., 272
Deguchi, M., 285
Dekempeneer, E., 272
Delgado, J. C., 165
Delsing, A., 178
Döhring, T., 154
Dommann, A., 23
Douglas, R. A., 162
D'Anna, E., 145

Edelman, F., 242
Eizenberg, M., 242
Elinson, V., 297
Elizalde, E., 100
Enard, J. P., 247
Estève, D., 326

Fišer, J., 233
Flükiger, R., 196
Fritsche, W.-E., 51
Fukaya, Y., 97
Fuwa, K., 18

Galán, L., 72
Galkin, I., 297
Gao, H. J., 304
Gaponov, S. V., 193
Gerasimovich, S., 297
Giorgi, L., 218
Gokhman, A., 229
González-Díaz, G., 133
Gonzo, L., 68
Gracin, D., 225
Granneman, E. H. A., 1
Gredić, T., 261
Griessen, R., 201
de Groot, D. G., 201
Gržeta, B., 225
Gué, A. M., 326
Güntherodt, H.-J., 173
Gür, T. M., 238

Haefke, H., 173
Hagstrom, S. B., 238
Halicioglu, T., 293
Hasegawa, S., 113
Heidemann, B., 60
Heinrich, A., 44
Heinzmann, U., 60, 154
Hernández-Rojas, J. L., 133
Hesse, D., 173
Higuchi, K., 280
Hiraki, A., 285
Hirao, T., 285
Hofmann, S., 149
Höhne, U., 307

Ikeda, T., 238
Imai, F., 158
Ingo, G. M., 218, 276
Ino, S., 18, 113
Ishida, A., 210
Ishizuka, Y., 189
Ito, T., 285
Ivlev, B. I., 201
Izumi, T., 285

Janssen, G. C. A. M., 125
Jastrabik, L., 193
Jelinek, M., 193
Jeremie, A., 196
Jiménez, C., 247
Jin, P., 169
Johansson, L.-S., 32

Kagechika, H., 91
Kajioka, H., 280
Kalachev, A. A., 307
Kalki, K., 36
Karasawa, S., 76
Kashiwagi, K., 105
Katardjiev, I. V., 87
Katsaros, A., 182
Kawashimo, Y., 280
Kaye, S. P., 252
Kelly, M., 238
Kheyrandish, H., 252
Kibe, H., 91
Kimura, S., 222
Kiselev, N. A., 193
Kitabatake, M., 285
Kitajima, M., 129
Kleineberg, U., 154
Kloidt, A., 154
Kluenkov, E. B., 193
Kobayashi, T., 97
Koeman, N. J., 201
Kohl, D., 149
Krist, Th., 141
Kukla, R., 51
Kunimori, K., 158

Landers, R., 162
Lang, H. P., 173
Laurent, A., 72
Lebedev, O. I., 193
Leskelä, M., 32
Leusink, G. J., 125
Lévy, F., 257
Liu, W. M., 304
Liu, Y. W., 304
Losbichler, P., 56
Lübbehusen, M., 51
Luby, S., 145
Luches, A., 145
Lucía, M. L., 133
Lunk, A., 117

Ma, Z., 304
Majokova, E., 145
Malherbe, J. B., 267
Mandrino, Dj., 233
Marchetti, F., 68
Marinković, V., 233
Martíl, I., 133
Martino, M., 145
Maruno, S., 169
Masu, K., 312
Mathauer, K., 307
Mazo, L. A., 193
Meneve, J., 272
Minoda, H., 12
Mitsuhashi, M., 76
Mitterer, C., 56
Miura, T., 189
Miyazaki, S., 210
Möhwald, H., 307
Möller, W., 319
Montero, I., 72
Mori, Y., 285
Morimoto, S., 97

Moser, J., 257
Murayama, Y., 105

Nagashima, S., 64
Nagoshi, M., 91
Nanbu, K., 330
Navinšek, B., 233
Nefedov, A., 297
Nender, C., 87
Niinistö, L., 32
Noro, H., 91
Nozoye, H., 158

Ogura, I., 64
Ohya, S., 76
Oosterlaken, T. G. M., 125

Padeletti, G., 276
Palacio, C., 247
Pang, S. J., 304
Panjan, P., 149, 233
Perrière, J., 72, 247
Peterlevitz, A. C., 162
Pimentel, F., 149
Pixley, R. E., 23
Popova, K., 301
Popović, N., 261
Pröpper, M., 154
Puigdollers, J., 165
Pulker, H. K., 215

Radelaar, S., 27, 125
Radić, N., 225
Ramm, J., 23
Rauh, M., 121
Rille, E., 215
Ritala, M., 32
Roberts, E. W., 252
Rokkaku, T., 97
Rouhani, M. D., 326
Rusina, G. G., 49

Sader, E., 242
Sahlaoui, M., 326
Sakamoto, I., 169
Sánchez-Quesada, F., 133
Santamaría, J., 133
Sanz, J. M., 100
Sarkar, M., 68
Sato, K., 91
Sato, Y., 222
Savvides, N., 182, 289
Scavia, G., 218
Schick, M., 36
Schmiedeskamp, B., 60, 154
Schneeweiß, H. J., 40
Schumann, J., 44
Seibt, E. W., 196
Seidel, W., 186
Sekiguchi, H., 105
Shen, J., 304
Shima, M., 12
Shimizu, S., 18
Shinno, H., 129
Shipov, I., 297
Show, Y., 285
Sklyadneva, I. Yu., 49
Sleptsov, V., 297
Smeets, J., 272
Soukup, L., 193
Spassova, E., 301
Spousta, J., 72
Steffen, H., 117
Stock, H. J., 154
Störi, H., 56
Strikovskij, M. D., 193
Sueda, M., 97
Sum, R., 173
Svetchnikov, V., 178

Takei, A., 210
Talanov, V. V., 193
Tamura, S., 222
Tanaka, Y., 238
Tappe, T., 60
Togashi, F., 76
Træholt, C., 178
Trigo, J. F., 100
Trommel, J., 27
Tsubouchi, K., 312
Tsukamoto, H., 97

Uchida, S., 330
Uchijima, T., 158

Van Den Bergh, V., 272
Vasiliev, A. L., 193
Verweij, E., 201
Vieira, M. T., 80
Vook, R. W., 205

Wada, T., 97
Wandelt, K., 36
Wegner, G., 307
Wen, J. G., 178
Werner, K., 27
Werner, W. S. M., 56
Wißmann, P., 121
Wu, Q. D., 304
Wulff, H., 117

Xue, Z. Q., 304

Yagi, K., 12
Yakimov, S., 297
Yamada, K., 91
Yamakawa, H., 18
Yamamuro, K., 18
Yamashita, N., 97
Yanagida, H., 18
Yoshida, H., 222, 330
Yoshida, K., 222

Žabkar, A., 233
Zalar, A., 149
Zandbergen, H. W., 178
Zarwasch, R., 215
Zhao, X. Y., 304
Zhu, C., 304
Zlatanović, M., 261
Zueger, A., 23

Subject Index of Volume 228

Adhesion
effect of plasma nitriding on the properties of (Ti,Al)N coatings deposited onto hot work steel substrates, 261
effect on lacquer adhesion of solid state properties of tin oxides, 218
Alloys
preparation and structure of Cu–W thin films, 225
properties and applications of vacuum-deposited Cu–Cr films, 44
shape memory thin film of Ti–Ni formed by sputtering, 210
Aluminium
area-selective CVD of metals, 312
computer simulation of growth of thin films fabricated by the sputtering method: comparison with experiment, 330
effect of surface aluminium oxide films on thermally induced hillock formation, 205
high bias sputtering for large-area selective deposition, 87
study of thin Al films on Sn, 162
Aluminium nitride
properties of reactively d.c.-magnetron-sputtered AlN thin films, 215
structure and properties of $(Ti_{1-x}Al_x)N$ films prepared by reactive sputtering, 238
Aluminium oxide
effect of surface aluminium oxide films on thermally induced hillock formation, 205
Amorphization
preparation and structure of Cu–W thin films, 225
Amorphous materials
effect of hydrogen dilution on the growth of hydrogenated amorphous silicon studied by *in-situ* phase-modulated ellipsometry, 109
persistent photoconductivity in undoped a-Si:H/a-SiC:H multilayers, 165
Anisotropy
morphology of thin polyimide films, 301
texture and residual macrostress of Ti–N coatings, 229
Annealing
characterization of a sputtered amorphous W–C–Co coating annealed in air, 80
effect of surface aluminium oxide films on thermally induced hillock formation, 205
preparation and structure of Cu–W thin films, 225
Atomic force microscopy
atomic force microscopy study of titanium dioxide thin films grown by atomic layer epitaxy, 32
Atomic layer epitaxy
atomic force microscopy study of titanium dioxide thin films grown by atomic layer epitaxy, 32
Auger electron spectroscopy
Auger electron spectroscopy, low energy electron diffraction and electron energy loss spectroscopy studies of Se overlayers grown on Cu(111) surfaces, 64
effects of carbon impurities in high T_c superconducting tapes using Auger electron spectroscopy, 196
high dose implantation of nitrogen in tool steel: Auger electron spectroscopy and hardness measurements, 267
interface of a titanium film ion plated on stainless steel, 91
study of thin Al films on Sn, 162
thin SiO_2–Si_3N_4–SiO_2 films: Auger depth profile evaluation by means of factor analysis, 68

Borides
the influence of various process gases on the magnetron sputtering of ZrB_{12}, 56
Boron nitride
deposition of wear-resistant BN coatings by r.f. plasma-assisted chemical vapour deposition, 272
fundamental research on the deposition of cubic boron nitride films on curved substrates by ion-beam-assisted vapor deposition, 97
X-ray photoelectron spectroscopy and secondary-ion mass spectrometry of boron nitride thin films on austenitic stainless steel, 276

Carbon
X-ray photoelectron spectroscopy and X-ray-excited Auger electron spectroscopy studies of the initial deposition of hydrogenated amorphous carbon, 72
Chemical vapour deposition
area-selective CVD of metals, 312
chemical vapour deposition tungsten film growth studied by *in situ* growth stress measurements, 125
relation between dislocations in chemically vapour-deposited diamond and the linewidth of the Raman spectrum, 76
thin films in the integrated circuit industry: requirements and deposition methods, 1
Chromium
study of thermally activated interfacial reactions in an Ni/Cr/Si multilayer structure, 149
Clusters
study of ultrafine particles–organic polymer thin films, 304
Coatings
deposition of wear-resistant BN coatngs by r.f. plasma-assisted chemical vapour deposition, 272
effect of plasma nitriding on the properties of (Ti,Al)N coatings deposited onto hot work steel substrates, 261
structural analysis of Zr–N and Ti–N films prepared by reactive plasma beam deposition, 233
structure and properties of $(Ti_{1-x}Al_x)N$ films prepared by reactive sputtering, 238
Computer simulation
atomic-scale simulation of interface defect formation in the initial stages of thin film growth, 326
computer simulation of growth of thin films fabricated by the sputtering method: comparison with experiment, 330
modelling and computer simulation of ion-beam- and plasma-assisted film growth, 319
Copper
oxidation kinetics of thin copper films studied by ellipsometry, 121
thin film growth on an O-precovered Ru(0001) surface, 36
Crystallization
relation between dislocations in chemically vapour-deposited diamond and the linewidth of the Raman spectrum, 76
Cuprous oxide
effects of carbon impurities in high T_c superconducting tapes using Auger electron spectroscopy, 196

Deposition process
computer simulation of growth of thin films fabricated by the sputtering method: comparison with experiment, 330

effect of plasma nitriding on the properties of (Ti,Al)N coatings deposited onto hot work steel substrates, 261
high bias sputtering for large-area selective deposition, 87
high rate sputtering of metals and metal oxides with a moving plasma zone, 51
in-situ observation of growth process of the InAs–GaAs heteroepitaxial system using scanning microprobe reflection high energy electron diffraction–total reflection angle X-ray spectroscopy, 18
in-situ growth of epitaxial $YBa_2Cu_3O_7$ thin films by on-axis unbalanced d.c. magnetron sputtering, 182
study of ultrafine particles–organic polymer thin films, 304
thin films in the integrated circuit industry: requirements and deposition methods, 1
X-ray photoelectron spectroscopy and X-ray-excited Auger electron spectroscopy studies of the initial deposition of hydrogenated amorphous carbon, 72

Depth profiling
high resolution Rutherford backscattering spectroscopy studies on Mo/Si multilayers, 60
laser deposition of Y–Ba–Cu–O on ZrO_2-coated sapphire substrates, 193
thin SiO_2–Si_3N_4–SiO_2 films: Auger depth profile evaluation by means of factor analysis, 68

Diamond
calculations for defects formed on diamond surfaces, 293
electron spin resonance study of diamond-like nuclei produced in an Si surface layer by high dose C ion doping, 285
hardness and elastic modulus of diamond and diamond-like carbon films, 289
relation between dislocations in chemically vapour-deposited diamond and the linewidth of the Raman spectrum, 76
X-ray photoelectron spectroscopy and X-ray-excited Auger electron spectroscopy studies of the initial deposition of hydrogenated amorphous carbon, 72
X-ray study of silicon distortion on deposition of diamond-like films, 297

Diffusion
hydrogen cleaning of silicon wafers. Investigation of the wafer surface after plasma treatment, 23

Elastic properties
hardness and elastic modulus of diamond and diamond-like carbon films, 289
texture and residual macrostress of Ti–N coatings, 229

Electrical properties and measurements
effects of carbon impurities in high T_c superconducting tapes using Auger electron spectroscopy, 196
persistent photoconductivity in undoped a-Si:H/a-SiC:H multilayers, 165
properties and applications of vacuum-deposited Cu–Cr films, 44

Electron diffraction
fundamental research on the deposition of cubic boron nitride films on curved substrates by ion-beam-assisted vapor deposition, 97

Electron energy loss spectroscopy
Auger electron spectroscopy, low energy electron diffraction and electron energy loss spectroscopy studies of Se overlayers grown on Cu(111) surfaces, 64

Electron microscopy
effect of plasma nitriding on the properties of (Ti,Al)N coatings deposited onto hot work steel substrates, 261
high resolution electron microscopy on superconducting $YBa_2Cu_3O_7$ thin films, 178

Electron spin resonance
electron spin resonance study of diamond-like nuclei produced in an Si surface layer by high dose C ion doping, 285

Electronic devices
thin SiO_2–Si_3N_4–SiO_2 films: Auger depth profile evaluation by means of factor analysis, 68

Ellipsometry
effect of hydrogen dilution on the growth of hydrogenated amorphous silicon studied by *in-situ* phase-modulated ellipsometry, 109
in and *ex situ* diagnostics of the growth of α-Ti thin films deposited by plasma-enhanced physical vapour deposition, 117
in situ real-time ellipsometric study of the growth of r.f. plasma deposited amorphous hydrogenated silicon oxynitride thin films, 137
optical properties of Zr films grown under ion bombardment, 100
oxidation kinetics of thin copper films studied by ellipsometry, 121
oxidation of silicon in r.f. plasma measured by rapid *in situ* during process ellipsometry, 129

Epitaxy
in-situ growth of epitaxial $YBa_2Cu_2O_7$ thin films by on-axis unbalanced d.c. magnetron sputtering, 182
reflection electron microscopy study of thin film growth, 12
structure-dependent surface conductance at the initial stages in metal epitaxy on Si(111) surface, 113
superconducting thin film thermometers for calorimetric particle detectors, 186

Etching
high bias sputtering for large-area selective deposition, 87
hydrogen cleaning of silicon wafers. Investigation of the wafer surface after plasma treatment, 23

Evaporation
smoothing of interfaces in ultrathin Mo/Si multilayers by ion bombardment, 154

Factor analysis
thin SiO_2–Si_3N_4–SiO_2 films: Auger depth profile evaluation by means of factor analysis, 68

Fourier transform infrared spectroscopy
low temperature plasma treatment of monomolecular Langmuir–Blodgett films, 307

Glow discharge
emission line intensities in an r.f. sputtering glow discharge system, 133

Gold
vibrations at Ag–Au interfaces, 49

Growth mechanism
area-selective CVD of metals, 312
atomic-scale simulation of interface defect formation in the initial stages of thin film growth, 326
influence of various process gases on the magnetron sputtering of ZrB_{12}, 56
initial growth mechanism of Bi–Sr–Ca–Cu–O thin films on $SrTiO_3$(110) surfaces studied by *in-situ* reflection high energy electron diffraction observation, 189
modelling and computer simulation of ion-beam- and plasma-assisted film growth, 319
on the influence of the substrate on the internal growth stress of titanium films at 250 °C, 40
reflection electron microscopy study of thin film growth, 12
thin film growth on an O-precovered Ru(0001) surface, 36

Hardness
hardness and elastic modulus of diamond and diamond-like carbon films, 289
high dose implantation of nitrogen in tool steel: Auger electron spectroscopy and hardness measurements, 267
Heterostructures
atomic-scale simulation of interface defect formation in the initial stages of thin film growth, 326
High energy electron diffraction
in situ observation of growth process of the InAs–GaAs heteroepitaxial system using scanning microprobe reflection high energy electron diffraction–total reflection angle X-ray spectroscopy, 18
initial growth mechanism of Bi–Sr–Ca–Cu–O thin films on $SrTiO_3(110)$ surfaces studied by *in-situ* reflection high energy electron diffraction observation, 189
study of growth kinetics in silicon gas source molecular beam epitaxy with disilane using RHEED intensity oscillations, 27
Hydrogen
effect of hydrogen dilution on the growth of hydrogenated amorphous silicon studied by *in-situ* phase-modulated ellipsometry, 109
H in Ti thin films, 141
hydrogen cleaning of silicon wafers. Investigation of the wafer surface after plasma treatment, 23

Interfaces
atomic-scale simulation of interface defect formation in the initial stages of thin film growth, 326
effect of hydrogen dilution on the growth of hydrogenated amorphous silicon studied by *in-situ* phase-modulated ellipsometry, 109
high resolution electron microscopy on superconducting $YBa_2Cu_3O_7$ thin films, 178
high resolution Rutherford backscattering spectroscopy studies on Mo/Si multilayers, 60
interface of a titanium film ion plated on stainless steel, 91
interface reaction of MgO/TiO_x superlattice thin films, 158
stress and anisotropy effects in the interfacial reactions of Al and TiN_x, 242
study of thermally activated interfacial reactions in an Ni/Cr/Si multilayer structure, 149
vibrations at Ag–Au interfaces, 49
Ion bombardment
fundamental research on the deposition of cubic boron nitride films on curved substrates by ion-beam-assisted vapor deposition, 97
hardness and elastic modulus of diamond and diamond-like carbon films, 289
influence of various process gases on the magnetron sputtering of ZrB_{12}, 56
ion beam modification of the physical properties of MoS_x films, 252
modelling and computer simulation of ion-beam- and plasma-assisted film growth, 319
optical properties of Zr films grown under ion bombardment, 100
smoothing of interfaces in ultrathin Mo/Si multilayers by ion bombardment, 154
Ion implantation
electron spin resonance study of diamond-like nuclei produced in an Si surface layer by high dose C ion doping, 285
high dose implantation of nitrogen in tool steel: Auger electron spectroscopy and hardness measurements, 267
Ion plating
interface of a titanium film ion plated on stainless steel, 91
reactivity between Ti and N_2–C_2H_2 mixed gas Ti(C,N) film deposition by arc-like plasma-enhanced ion plating, 280
structures of Au and Ti thin films formed at the interface with Si by the plasma process, 105

Kinetics
study of growth kinetics in silicon gas source molecular beam epitaxy with disilane using RHEED intensity oscillations, 27

Langmuir–Blodgett films
low temperature plasma treatment of monomolecular Langmuir–Blodgett films, 307
Laser ablation
laser deposition of Y–Ba–Cu–O on ZrO_2–coated sapphire substrates, 193
Laser irradiation
excimer (XeCl) laser processing of W/Si bilayers and multilayers up to the Si melting threshold, 145
laser-damage threshold of Sc_2O_3/SiO_2 high reflector coatings for a laser wavelength of 355 nm, 222
Low energy electron diffraction
Auger electron spectroscopy, low energy electron diffraction and electron energy loss spectroscopy studies of Se overlayers grown on Cu(111) surfaces, 64

Magnesium oxide
interface reaction of MgO/TiO_x superlattice thin films, 158
Metallization
area-selective CVD of metals, 312
chemical vapour deposition tungsten film growth studied by *in situ* growth stress measurements, 125
Molecular beam epitaxy
in situ observation of growth process of the InAs–GaAs heteroepitaxial system using scanning microprobe reflection high energy electron diffraction—total reflection angle X-ray spectroscopy, 18
initial growth mechanism of Bi–Sr–Ca–Cu–O thin films on $SrTiO_3(110)$ surfaces studied by *in-situ* reflection high energy electron diffraction observation, 189
study of growth kinetics in silicon gas source molecular beam epitaxy with disilane using RHEED intensity oscillations, 27
Molybdenum
ion beam modification of the physical properties of MoS_x films, 252
Multilayers
excimer (XeCl) laser processing of W/Si bilayers and multilayers up to the Si melting threshold, 145
high resolution Rutherford backscattering spectroscopy studies on Mo/Si multilayers, 60
intrinsic pinning of vortices in superconducting Nb/Cu multilayers grown by molecular beam epitaxy, 201
laser deposition of Y–Ba–Cu–O on ZrO_2-coated sapphire substrates, 193
laser-damage threshold of Sc_2O_3/SiO_2 high reflector coatings for a laser wavelength of 355 nm, 222
persistent photoconductivity in undoped a-Si:H/a-SiC:H multilayers, 165
smoothing of interfaces in ultrathin Mo/Si multilayers by ion bombardment, 154
study of thermally activated interfacial reactions in an Ni/Cr/Si multilayer structure, 149

Nanostructures
high resolution electron microscopy on thin superconducting $YBa_2Cu_3O_7$ thin films, 178
Nickel
study of thermally activated interfacial reactions in an Ni/Cr/Si multilayer structure, 149
Nitrides
structural analysis of Zr–N and Ti–N films prepared by reactive plasma beam deposition, 233
Nuclear reaction analysis
transformation of titanium nitride in oxygen plasma, 247
Nucleation
thin films in the integrated circuit industry: requirements and deposition methods, 1

Optical coatings
laser-damage threshold of Sc_2O_3/SiO_2 high reflector coatings for a laser wavelength of 355 nm, 222
Optical properties
morphology of thin polyimide films, 301
optical properties of Zr films grown under ion bombardment, 100
Organic substances
study of ultrafine particles–organic polymer thin films, 304
Oxidation
characterization of a sputtered amorphous W–C–Co coating annealed in air, 80
oxidation kinetics of thin copper films studied by ellipsometry, 121
oxidation of silicon in r.f. plasma measured by rapid *in situ* during process ellipsometry, 129
Oxygen
thin film growth on an O-precovered Ru(0001) surface, 36

Phase transitions
shape memory thin film of Ti–Ni formed by sputtering, 210
Physical vapour deposition
high rate sputtering of metals and metal oxides with a moving plasma zone, 51
Plasma processing and deposition
deposition of wear-resistant BN coatings by r.f. plasma-assisted chemical vapour deposition, 272
high bias sputtering for large-area selective deposition, 87
high rate sputtering of metals and metal oxides with a moving plasma zone, 51
in and *ex situ* diagnostics of the growth of α-Ti thin films deposited by plasma-enhanced physical vapour deposition, 117
low temperature plasma treatment of monomolecular Langmuir–Blodgett films, 307
modelling and computer simulation of ion-beam- and plasma-assisted film growth, 319
transformation of titanium nitride in oxygen plasma, 247
Polymers
morphology of thin polyimide films, 301

Radiation damage
electron spin resonance study of diamond-like nuclei produced in an Si surface layer by high dose C ion doping, 285
excimer (XeCl) laser processing of W/Si bilayers and multilayers up to the Si melting threshold, 145
Raman scattering
relation between dislocations in chemically vapour-deposited diamond and the linewidth of the Raman spectrum, 76
Reaction kinetics
reactivity between Ti and N_2–C_2H_2 mixed gas Ti(C,N) film deposition by arc-like plasma-enhanced ion plating, 280
stress and anisotropy effects in the interfacial reactions of Al and TiN_x, 242
Reflection spectroscopy
deposition of wear-resistant BN coatings by r.f. plasma-assisted chemical vapour deposition, 272
Ruthenium
thin film growth on an O-precovered Ru(0001) surface, 36
Rutherford backscattering spectroscopy
high resolution Rutherford backscattering spectroscopy studies on Mo/Si multilayers, 60
transformation of titanium nitride in oxygen plasma, 247

Scanning tunnelling microscopy
growth and structure of $YBa_2Cu_3O_{7-\delta}$ thin films studied by scanning tunnelling microscopy and electron microscopy, 173
Secondary-ion mass spectrometry
X-ray photoelectron spectroscopy and secondary-ion mass spectrometry of boron nitride thin films on austenitic stainless steel, 276
Selenides
Auger electron spectroscopy, low energy electron diffraction and electron energy loss spectroscopy studies of Se overlayers grown on Cu(111) surfaces, 64
Silicon
excimer (XeCl) laser processing of W/Si bilayers and multilayers up to the Si melting threshold, 145
hydrogen cleaning of silicon wafers. Investigation of the wafer surface after plasma treatment, 23
in situ real-time ellipsometric study of the growth of r.f. plasma deposited amorphous hydrogenated silicon oxynitride thin films, 137
oxidation of silicon of r.f. plasma measured by rapid *in situ* during process ellipsometry, 129
reflection electron microscopy study of thin film growth, 12
structure-dependent surface conductance at the initial stages in metal epitaxy on Si(111) surface, 113
structures of Au and Ti thin films formed at the interface with Si by the plasma process, 105
study of growth kinetics in silicon gas source molecular beam epitaxy with disilane using RHEED intensity oscillations, 27
study of thermally activated interfacial reactions in an Ni/Cr/Si multilayer structure, 149
X-ray study of silicon distortion on deposition of diamond-like films, 297
Silver
vibrations at Ag–Au interfaces, 49
Sputtering
characterization of a sputtered amorphous W–C–CO coating annealed in air, 80
computer simulation of growth of thin films fabricated by the sputtering method: comparison with experiment, 330
emission line intensities in an r.f. sputtering glow discharge system, 133
fundamental research on the deposition of cubic boron nitride films on curved substrates by ion-beam-assisted vapor deposition, 97
high rate sputtering of metals and metal oxides with a moving plasma zone, 51
influence of various process gases on the magnetron sputtering of ZrB_{12}, 56

in-situ growth of epitaxial $YBa_2Cu_3O_7$ thin films by on-axis unbalanced d.c. magnetron sputtering, 182
MoS_{2-x} lubricating films: structure and wear mechanisms investigated by cross-sectional transmission electron microscopy, 257
preparation and microstructure of reactively sputtered $Ti_{1-x}Zr_xN$ films, 169
preparation and structure of Cu–W thin films, 225
properties and applications of vacuum-deposited Cu–Cr films, 44
properties of reactively d.c.-magnetron-sputtered AlN thin films, 215
shape memory thin film of Ti–Ni formed by sputtering, 210
structure and properties of $(Ti_{1-x}Al_x)N$ films prepared by reactive sputtering, 238
Steel
high dose implantation of nitrogen in tool steel: Auger electron spectroscopy and hardness measurements, 267
Stress
chemical vapour deposition tungsten film growth studied by *in situ* growth stress measurements, 125
on the influence of substrate properties on the internal growth stress of titanium films at 250 °C, 40
stress and anisotropy effects in the interfacial reactions of Al and TiN_x, 242
Structural properties
growth and structure of $YBa_2Cu^3O_{7-\delta}$ thin films studied by scanning tunnelling microscopy and electron microscopy, 173
morphology of thin polyimide films, 301
properties and applications of vacuum-deposited Cu–Cr films, 44
shape memory thin film of Ti–Ni formed by sputtering, 210
structural analysis of Zr–N and Ti–N films prepared by reactive plasma beam deposition, 233
Sulphides
ion beam modification of the physical properties of MoS_x films, 252
MoS_{2-x} lubricating films: structure and wear mechanisms investigated by cross-sectional transmission electron microscopy, 257
Sulphur
ion beam modification of the physical properties of MoS_x films, 252
Superconductivity
effects of carbon impurities in high T_c superconducting tapes using Auger electron spectroscopy, 196
growth and structure of $YBa_2Cu_3O_{7-\delta}$ thin films studied by scanning tunnelling microscopy and electron microscopy, 173
high resolution electron microscopy on superconducting $YBa_2Cu_3O_7$ thin films, 178
in-situ growth of epitaxial $YBa_2Cu_3O_7$ thin films by on-axis unbalanced d.c. magnetron sputtering, 182
initial growth mechanism of Bi–Sr–Ca–Cu–O thin films on $SrTiO_3(110)$ surfaces studied by *in-situ* reflection high energy electron diffraction observation, 189
intrinsic pinning of vortices in superconducting Nb/Cu multilayers grown by molecular beam epitaxy, 201
laser deposition of Y–Ba–Cu–O on ZrO_2-coated sapphire substrates, 193
superconducting thin film thermometers for calorimetric particle detectors, 186
Superlattices
interface reaction of MgO/TiO_x superlattice thin films, 158
Surface and interface states
structures of Au and Ti thin films formed at the interface with Si by the plasma process, 105
Surface conductivity
structure-dependent surface conductance at the initial stages in metal epitaxy on Si(111) surface, 113
Surface defects
calculations for defects formed on diamond surfaces, 293
Surface diffusion
structures of Au and Ti thin films formed at the interface with Si by the plasma process, 105
Surface morphology
atomic force microscopy study of titanium dioxide thin films grown by atomic layer epitaxy, 32
effect of surface aluminium oxide films on thermally induced hillock formation, 205
calculations for defects formed on diamond surfaces, 293
Surface roughness
in situ observation of growth process of the InAs–GaAs heteroepitaxial system using scanning microprobe reflection high energy electron diffraction–total reflection angle X-ray spectroscopy, 18
smoothing of interfaces in ultrathin Mo/Si multilayers by ion bombardment, 154
Surface segregation
reflection electron microscopy study of thin film growth, 12
Surface structure
calculations for defects formed on diamond surfaces, 293

Thermal desorption
low temperature plasma treatment of monomolecular Langmuir–Blodgett films, 307
Tin
study of thin Al films on Sn, 162
Tin oxide
effect on lacquer adhesion of solid state properties of tin oxides, 218
Titanium
H in Ti thin films, 141
interface of a titanium film ion plated on stainless steel, 91
on the influence of the substrate properties on the internal growth stress of titanium film at 250 °C, 40
structural analysis of Zr–N and Ti–N films prepared by reactive plasma beam deposition, 233
Titanium carbide
reactivity between Ti and N_2–C_2H_2 mixed gas Ti(C,N) film deposition by arc-like plasma-enhanced ion plating, 280
Titanium nitride
reactivity between Ti and N_2–C_2H_2 mixed gas Ti(C,N) film deposition by arc-like plasma-enhanced ion plating, 280
stress and anisotropy effects in the interfacial reactions of Al and TiN_x, 242
structure and properties of $(Ti_{1-x}Al_x)N$ films prepared by reactive sputtering, 238
texture and residual macrostress of Ti–N coatings, 229
transformation of titanium nitride in oxygen plasma, 247
Titanium oxide
atomic force microscopy study of titanium dioxide thin films grown by atomic layer epitaxy, 32
in and *ex situ* diagnostics of the growth of α-Ti thin films deposited by plasma-enhanced physical vapour deposition, 117
interface reaction of MgO/TiO_x superlattice thin films, 158
on the influence of the substrate properties of the internal growth stress of titanium films at 250 °C, 40

Transmission electron microscopy
growth and structure of $YBa_2Cu_3O_{7-\delta}$ thin films studied by scanning tunneling microscopy and electron microscopy, 173
MoS_{2-x} lubricating films: structure and wear mechanisms investigated by cross-sectional transmission electron microscopy, 257
Tribology
MoS_{2-x} lubricating films: structure and wear mechanisms investigated by cross-sectional transmission electron microscopy, 257
Tungsten
characterization of a sputtered amorphous W–C–CO coating annealed in air, 80
chemical vapour deposition tungsten film growth studied by *in situ* growth stress measurements, 125
excimer (XeCl) laser processing of W/Si bilayers and multilayers up to the Si melting threshold, 145
superconducting thin film thermometers for the calorimetric particle detectors, 186
thin films in the integrated circuit industry: requirements and deposition methods, 1
X-ray diffraction
in and *ex situ* diagnostics of the growth of α-Ti thin films deposited by plasma-enhanced physical vapour deposition, 117
intrinsic pinning of vortices in superconducting Nb/Cu multilayers grown by molecular beam epitaxy, 201
texture and residual macrostress of Ti–N coatings, 229
X-ray study of silicon distortion on deposition of diamond-like films, 297
X-ray photoelectron spectroscopy
X-ray photoelectron spectroscopy and secondary-ion mass spectrometry of boron nitride films on austenitic stainless steel, 276
X-ray photoelectron spectroscopy and X-ray-excited Auger electron spectroscopy studies of the initial deposition of hydrogenated amorphous carbon, 72
Zirconium
optical properties of Zr films grown under ion bombardment, 100
structural analysis of Zr–N and Ti–N films prepared by reactive plasma beam deposition, 233